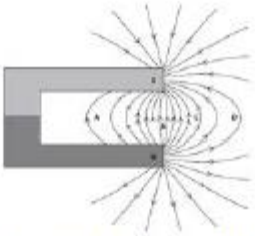
Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 12_Magnetism And The Motor Effect

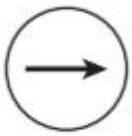
Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Mark Schemes

Q1.

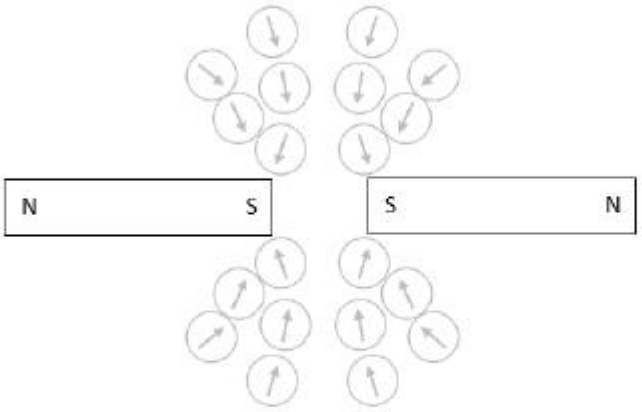
Question number	Answer	Mark
	B  A,C and D are in the areas where the field lines are further apart and the field is weaker	(1)

Q2.

Question Number	Answer	Mark
(i)	**The only correct answer is A**  **B is incorrect** because it is not tangential to the (circular) magnetic field lines produced by the current **C is incorrect** because it is not tangential to the (circular) magnetic field lines produced by the current **D is incorrect** because it is not tangential to the (circular) magnetic field lines produced by the current	(1)

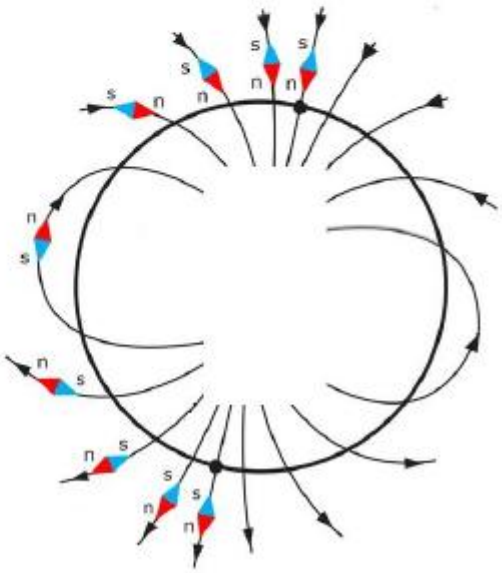
Question Number	Answer	Additional guidance	Mark
(ii)	A description of the method that includes: **EITHER** (using single compass) record field at one location (1) find how field continues (1) connect the dots (to reveal overall shape of field / line) (1) **OR** arrange multiple compasses (1) over all of the card (1) direction of (all of) the compass needles indicates shape of field (1) **OR** sprinkle iron filings on card (before current is switched on) (1) switch on current/ tap card (1) pattern produced indicates shape of field (1)	Marking points may be awarded from a diagram. mark where compass points **or** put dots at each end of needle / arrow move compass to new position / until needle over previous dot start from different position and repeat (idea of obtaining concentric circles) all the way round the wire allow iron filings to arrange themselves	**(3)**

Q3.

Question number	Answer	Additional guidance	Mark
(i)	example:  rectangles in (approximately) correct position (1) all four poles correctly labelled (1)	judge by eye but do not allow rectangles in contact	(2) AO3

Question number	Answer	Additional guidance	Mark
(ii)	a description to include		(3) AO1
	place a (plotting) compass on the paper (near to the magnet(s)) and mark direction of the field (at that point) (1)	place a (plotting) compass on the paper (near to the magnet(s)) and put a dot at each end of the needle	
	determine how the field continues from that point (1)	move compass so that one end of the needle is over the mark (just made)	
	connect field lines to reveal overall shape(1)	join up the dots	

Q4.

Question number	Answer	Additional guidance	Mark
(i)	Sketch including any **two** from at least two field lines outside the Earth approximately aligning with compasses (1) at least two field lines continue inside the Earth towards imaginary poles (1) all arrows on lines drawn in the correct direction(s) outside the Earth (1) 	field lines need to have a gap inside the Earth ignore arrows on field lines inside the Earth	**(2)** **AO3.1**

Question number	Answer	Additional guidance	Mark
(ii)	(magnetic outer) **core** (1)	moving charges/ions	**(1)** **AO1.1**

Q5.

Question number	Answer	Additional guidance	Mark
i	arrow pointing vertically up (1)	seen anywhere judge direction by eye	(1) AO2.1

Question number	Answer	Additional guidance	Mark
ii	statement (1) accept any clear **action** that will reverse the current **OR** accept any clear **action** that will reverse the poles	 swap the battery connections around turn the magnet around	(1) AO2.2

Question number	Answer	Additional guidance	Mark
iii	rearrangement and substitution (1) (B =) $\frac{0.078}{3.2 \times 0.042}$ evaluation (1) 0.58 (T)	 (B =) $\frac{0.078}{0.1344}$ any number rounding to 0.6 (T) award full marks for the correct answer without working	(2) AO2.1